

- Fig. 6. Funnel of the foregoing viewed laterally.
 Fig. 7. Internal aspect of the same. Enlarged under a lens.
 Fig. 8. Lateral aspect of the anterior end of *Nicomache lumbricalis* from the 'Valorous' Expedition to Greenland in 1875.
 Fig. 9. Anterior end of *Praxillella gracilis*, with protruded proboscis, from Canada. Enlarged.

PLATE III.

- Fig. 1. Bristle of the first foot of *Maldane sarsi*. × Zeiss oc. 2, obj. D.
 Fig. 2. Winged bristle of the second foot with peculiar curvature. × Zeiss oc. 4, obj. D.
 Fig. 3. Spiked bristle of the same annelid. × Zeiss oc. 2, obj. D, with draw-tube.
 Fig. 4. Hook of the foregoing. × Zeiss oc. 2, obj. D.
 Fig. 5. Hook of *Heteroclymene robusta*. Norway. × Zeiss oc. 4, obj. D.
 Fig. 6. Hook of *Nicomache? canadensis*. × Zeiss oc. 2, obj. A.
 Fig. 7. Hook of the first bristled segment of *Praxillella collaris*. × Zeiss oc. 2, obj. D, with draw-tube.
 Fig. 8. Typical hook of the foregoing (no gular bristles). × Zeiss oc. 4, obj. D, with draw-tube.
 Fig. 9. Spine from the third segment of *Nicomache? canadensis*. × about 30 diam.
 Fig. 10. Bristle from the second foot of the same form. × Zeiss oc. 4, obj. D.

VIII.—On some rare Amazonian Mammals from the Collection of the Para Museum. By OLDFIELD THOMAS.

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By the kindness of the authorities of the Para Museum I have again been permitted to examine some rare mammals which have come into the possession of that institution either from their collectors or from the Para Zoological Gardens, which are kept in conjunction with the Museum.

Notable among these latter is the truly remarkable form, intermediate between the monkeys and marmosets, described as *Callimico snethlageri* by Ribeiro, and referred to below under the heading of *Callimico goeldii*.

The new genus of bats—*Cyttarops*—is also a most interesting discovery.

1. *Callicebus remulus*, Thos.

♂. 1. Cussary, south bank of Amazon between mouths of Xingu and Tapajoz. Coll. O. Martins.

♂. 12. Tamucury, same region, 2 hours distant by canoe.

C. remulus was described in 1908 on a specimen from Santarem presented in 1876 by Mr. Wickham. The present exact record of the occurrence of the species is of value, as Santarem might have been merely the place to which the type had been brought from elsewhere. Now, however, it is clear that the species occupies the area between the Amazon, Xingu, and Tapajoz, at the north-western corner of which Santarem is situated.

The new specimens agree with the type in all essential respects.

2. *Callimico goeldii*, Thos.

♀. Para Zoological Gardens. Type of *Callimico snethlageri*, Ribeiro.

In the 'Brasilianische Rundschau' for December 1911, p. 21, Dr. A. de Miranda Ribeiro, of Rio Janeiro, described a new genus and species of monkey, *Callimico snethlageri*, which he stated to be "intermediate between *Callicebus* and *Mico*," on a specimen then living in the Para Zoological Gardens. This specimen has since died and has been sent over for examination.

At the first glance it is evident that, as to the species, it is identical with my "*Midas goeldii*" described in 1904* on a specimen which had also been kept alive in the Para Gardens, but of which the skull had unfortunately been mislaid, my reference of the species to the genus *Midas* being avowedly provisional.

Dr. Ribeiro formed his genus *Callimico* purely on the external characters, which, whatever they may have appeared on the living animal, are by no means very striking on the skin; and it has therefore been with much interest that I have examined the skull of the present specimen.

This proves to be of extraordinary interest, for it seems to show that *Callimico* is really intermediate between the two great Neotropical families Cebidæ and Callitrichidæ, as suggested by Dr. Ribeiro.

Externally the animal is like a marmoset, having similarly long, curved, compressed claws and doubtfully opposable pollex. It should, however, be noticed that the "nails" of many Cebidæ, notably of *Saimiri*, are as compressed as in the marmosets, the only difference being in their length.

On the other hand, the skull is provided with six cheek-

* Ann. & Mag. Nat. Hist. (7) xiv. p. 189 (1904).

teeth in each jaw, exactly as in the Cebidæ, while the invariable formula of the Callitrichidæ is PM. $\frac{3}{3}$, M. $\frac{2}{2}$.

In its general shape the skull resembles that of a small *Saimiri*, the brain-case being high and rounded and the upper profile, from tip of nasals to occiput, evenly convex, with no resemblance to the flattened forehead and prominent brow-ridges of the marmosets. The orbits are not as slanting as in *Saimiri*, more so than in *Callithrix*. Malar part of zygoma broadly expanded vertically. Anterior part of base of skull deeply concave between the pterygoids, with a narrow mesial septum. Pterygoids shaped quite as in marmosets, the ectopterygoid not so broadened as in most Cebidæ. Lower jaw with the well-marked chin and comparatively vertical incisors of the Cebidæ instead of the slanted symphysis and incisors of the marmosets. Coronoid and condylar processes nearer together than in either of the related forms.

Molars, although less narrow, essentially of the triangular type of those of marmosets, the internal cingulum well developed, but with no distinct hypocone, the development of this cusp being what causes the characteristic square form of the molars of the Cebidæ and other monkeys, including man. In *Saimiri* the cusp is less developed than in other Cebidæ, but is nevertheless always present. Lower incisors and canines of normal relative proportions, not specialized as in the genus *Callithrix*.

Callimico thus proves to be almost exactly intermediate between the otherwise well-defined families Cebidæ and Callitrichidæ, and it is quite a doubtful question as to which of them it should be referred to. On the whole, in spite of its marmoset-like claws and the structure of its molars, I am inclined to place it with the Cebidæ, of which it would form a special subfamily.

We should thus get the following arrangement of the New-World monkeys:—

- | | |
|---|--------------------------------|
| A. Molars $\frac{3}{3}$. Skull rounded, forehead not flattened..... | Fam. <i>Cebidæ</i> . |
| <i>a.</i> Molars with hypocones. Digits with shortened nails (often compressed) | Subfam. <i>Cebinæ</i> . |
| <i>b.</i> Molars triangular, without hypocones. Digits with long claws | Subfam. <i>Callimiconinæ</i> . |
| B. Molars $\frac{2}{2}$. Skull with flattened forehead. Molars triangular, without hypocones. Digits with long claws | Fam. <i>Callitrichidæ</i> . |

It is to be noted that the difference in structure between molars with hypocones and those without is not so abrupt as

it sounds, for there is almost a perfect series of gradations from (1) the marmosets, which have no trace of hypocones, through (2) *Callimico*, which has a slight rise in the ingulum that might be called a potential hypocone, to (3) *Saimiri*, which has small and simple hypocones, and is itself again separated from (4) *Callicebus* and other monkeys which have complicated square molars with large hypocones and connecting commissures.

3. *Centronycteris maximiliani*, Fisch.

♀. Utingu, near Para.

This is the first example of the typical Brazilian *C. maximiliani* (*Vespertilio calcarata*, Wied, nec Raf.; *C. wiedi*, Palmer) which I have had the opportunity of examining, as the only specimen of *Centronycteris* that the British Museum possessed, one from Panama, now proves to be separable (see 'Annals,' December 1912, p. 638).

Members of the genus *Centronycteris* seem to be exceedingly rare in collections, Wied's type from Espirito Santo, a female from Peru in Berlin, and the above-mentioned specimens from Para and Panama being the only ones of which I can find any record.

4. *Cormura brevirostris*, Wagn.

Myropteryx pullus, Miller.

♂. 4; ♀. 5. Ananindena, near Para.

I am not prepared to accept Mr. Miller's separation* of the Surinam bats collected by Kappler from Wagner's *Cormura brevirostris*, to which Peters, the author of the genus *Cormura*, himself referred them.

By the great kindness of the authorities of the Berlin and Vienna Museums I have been allowed to examine (1) two (adult and immature) of the four specimens from Surinam typical of *Myropteryx pullus*; (2) the original type of *Cormura brevirostris*, unfortunately now without skull; and (3) the specimen from Baraneiva, Matto Grosso, referred by Miller also to his *Myropteryx pullus*.

Although the loss of the skull of the type of *Cormura brevirostris* makes it impossible to be absolutely certain in the matter, I have come to the conclusion that, at least for the present, these various specimens should all be referred to a single form.

Miller's chief reason for distinguishing *Myropteryx* was its

* P. Biol. Soc. Wash. xix. p. 59 (1906).

asserted want of a hypocone to the molars; but although the hypocone is low it appears to me fully as much developed as it is in many specimens of *Peropteryx*, or, if it is smaller, the difference is only in degree and not in kind. Perhaps Mr. Miller's examination was made before the skulls were as completely cleaned as is now the case.

The only difference between *Myropteryx* and *Cormura* that might result in the resuscitation of the former is in the shape of the posterior palate, a point in which none of the specimens I have seen really agree with Peters's plate of *Cormura*. But the slightest damage to the most delicate part of the tiny skull, or even insufficient cleaning and consequent inexact drawing*, might have resulted in such a figure as is published by Peters, and I am therefore not prepared to consider this point as of sufficient importance to counterbalance the other evidences of identity.

A specimen of this same bat was obtained on the Rio Inambari, Peru, by the late P. O. Simons, and two others at Para by A. Robert.

While all the adult specimens of this bat have no basisphenoid septum, as figured by Peters, it is worthy of remark that the immature example received from Berlin has a well-marked septum. Whether this is due to youth or is an individual abnormality I am not at present able to say.

5. *Cyttarops alecto*, gen. et sp. nn.

♂. 10. Moca jatuba, near Para, 10th May, 1912. Coll. F. Lima. B.M. no. 12. 11. 4. 5. *Type*.

"Caught in garden."

CYTTAROPS, gen. nov. (*Emballonuride*—*Diclidurine*.)

Colour normal. Tail without terminal modification, its tip just projecting on the upper surface of the interfemoral. Skull not so highly modified as in *Diclidurus*, the muzzle not bent upwards; a frontal cup present, but its boundaries and the junction of its floor and walls less sharply angular. Slender postorbital processes present. Palate ending opposite last molar. Basisphenoid pit barely defined, practically continuous with roof of mesopterygoid fossa, not divided by a mesial septum. Tibia grooved on plantar aspect, as in *Diclidurus*.

Dentition practically as in *Diclidurus*. Canines without, but incisors with, a supplementary terminal posterior cusp.

* Possibly worked up from a specimen of *Peropteryx*.

Posterior lower premolar * contracted antero-posteriorly, the two premolars crushed between the canine and first molar.

Type:—

Cyttarops alecto, sp. n.

General appearance that of a medium-sized *Saccopteryx* or *Pteropteryx*.

Fur rather long, thin and loose; hairs of back about 6 mm. in length. Colour above and below uniform dull smoky grey, a little browner than Ridgway's "mouse-grey"; the bases of the hairs inconspicuously paler than the tips on the fore-back, darker on the hind-back. Membranes naked, except that the median proximal portion of the interfemoral is more or less hairy. Ears of medium length, broadly rounded, a hair-covered ridge running up the thin anterior surface to the tip, cutting off their anterior third; front edge strongly convex, tip rounded, outer margin convex. Tragus very remarkable in shape, its inner edge of medium length, straight, inner terminal corner angular, outer rounded; lower half of outer margin occupied by a proportionally enormous angular lobe, no such lobe being known in any other bat, the most similar being that on the inner side of the tragus in *Megaderma*. Wings to the outer side of the tarsus. Calcar long, without postcalcareal lobule.

Skull and teeth as defined above.

Dimensions of the type (the starred measurements taken in the flesh by the collector):—

Forearm 46 mm.

Head and body *50; tail *20; hind foot *8; ear 10; tragus on inner edge 2·8; third finger, metacarpal 4·5, first phalanx 9·5; lower leg and foot (c. u.) 27; calcar 15.

Skull: greatest length 12·6; basi-sinual length 10·1; zygomatic breadth 8; interorbital breadth 4·5; length of postorbital process 2·5; intertemporal breadth 3·7; breadth of brain-case 7; height of brain-case from between bullæ 5·6; palato-sinual length 3·1; breadth between outer corners of m^2 6; front of canine to back of m^3 5·5.

Hab. of type as above. Another specimen from British Guiana.

This bat forms a most remarkable and interesting discovery, owing to its relationship to the aberrant *Diclidurus*, which it tends to connect with the ordinary members of the Emballonuridae. In appearance it is just like an average sac-wing

* This tooth is peculiarly abnormal on both sides in the type, the above description being based on Mr. McConnell's specimen.

bat, such as *Peropteryx*, but closer study shows that it is unquestionably related to *Diclidurus*, with which it shares the peculiar frontal cup and grooved tibia. I have been able to find no trace of an antebrachial sac, nor of any caudal modification, but spirit-specimens will be necessary before the absence of these or other analogous characters can be verified.

The first discovery of this bat is to be credited to Mr. F. V. McConnell, who presented in 1908 an example obtained on the Mazaruni River, British Guiana, by his collector Cozier. Owing, however, to the specimen being an imperfect skin, with just the front of the jaws dried in it, it was put away in the collection as a "*Saccopteryx*," to some members of which group *Cyttarops* has so strong a resemblance.

Imperfect as it is, this specimen, which was recognized by the unique shape of its tragus, has, however, now been useful in checking some of the characters observed in the Para example, and notably in its indication that the lower premolars of the latter are abnormal in structure.

It is to be noticed that in his description of "*Vespertilio caninus*" Wied states that "Der Schadel hat zwischen den Augen einen tiefen Eindruck," which suggests the frontal cup of *Cyttarops*. But, besides the fact that Peters examined the type, the figure of the tragus in the 'Abbildungen' is sufficient to prove that Wied's bat was really a *Peropteryx*.

6. *Holochilus nanus*, Thos.

♀. Para.

This rare dwarf species of *Holochilus* was described in 1897 on a specimen from the island of Marajó sent to me by Dr. Goeldi.

IX.—On small Mammals collected in Jujuy by Señor E. Budin. By OLDFIELD THOMAS.

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By the kind assistance of the Hon. N. Charles Rothschild, the British Museum has received as a donation a collection of small mammals made by Señor E. Budin during March and April 1912 in Central Jujuy, North Argentina, a region from which but few mammals had previously been obtained.

Unfortunately Señor Budin's notes on the localities have